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Waster Water Energy

**How much water do you use?**

**SWBAT** make predictions about water usage for particular activities. They will further compare classroom data for everyday water usage. They will also be able to generate ideas about how we can reduce our water usage.

**Standard –** 3c – Engaging students in learning,

2b – Establising a culture for learning

3.OA.1 - Represent and solve problems involving multiplication and division

3.MD.3 - Represent and interpret data.

3.W.1 - Write opinion pieces on topics or texts, supporting a point

of view with reasons.

**Day 1**

**Teach**

How much water do we use everyday? How can reduce our daily water usage? Ask students “Where does water come from?” Give students are opportunity to turn and talk about where they think water comes from. Call on students to share their ideas. Soliciate ideas from students about what we use water for. Chart these ideas down on paper. Students might say things like : washing up, brushing your teeth, and drinking.

**Model**

Show students a chart with a list of items that use water. Have them begin to make a prediction about how much water each one uses. Do the first one for them (see attached titled “Water usage prediction). They will also make a prediction about which activity uses the most water.

|  |  |
| --- | --- |
| **Activity** | **Water Usage Prediction** |
| Brushing Teeth | 1 gallon each time |
| Washing Hands |  |
| Flushing Toilet |  |

**Try it out -** students work in groups of 4 to brainstorm how much water they think each activity uses. Fill in the chart with their answers.

**Differentiate** – Students who may need extra help with units to measuring liquid, will work with the teacher to recap units. (Such as gallons, pints, cups) Remind students of what these measurements look like by showing them containers of that size. Students will then come up with predictions for how much water each activity uses. They will also use the water usage prediction worksheet.

**Share**

Students gather into a circle to discuss what predictions they made about water usage for each activity. Show students a chart with the actual estimated amounts of water usage for each activity. Estimated water amounts taken from waterwatch.org (Water Watch Detective) Also remind them of the containers that represent these amounts for each activity.

**Homework** – Students will take a Water Usage Activity sheet home and for one day they will monitor their water usage by using tally marks to record the number of times they did each item in one day. (see attached worksheet)

Instructions – Every time you do anyone of these activities at home, put a tally mark next to the activity in the Tally Mark column. Put no answers in the last column (Estimated Water Usage) we will complete this column in class.

|  |  |  |
| --- | --- | --- |
| **Activity** | **Tally Mark** | **Estimated Water Usage** |
| Brushing Teeth |  |  |
| Taking a bath |  |  |
| Washing your hands |  |  |
| Flushing the toilet |  |  |

**Day 2**

**Teach**

Explain to students the importance of conserving water. Tell them the earth is made up of 70-75% of water. Out of all that water 97% of that is salt water, water that we cannot use for our daily activities. Out of the 3% of water that is left 2% of that water is locked in glaciers. Define glaciers if necessary. So that leaves us with 1% of earth’s water. We must use this water wisely. So let’s see how much water you actually use daily.

**Model**

Teacher will show students how to calculate total water usage for each activity using multiplication.

Ex. Flushing the toilet bowl = 5 gallons of water for each flush

So if I flush the toilet bowl 3 times. 5x3=15. Then in turn I’ve used 15 gallons of water in one day.

Explain to students that after we have totaled our water usage for a single day will chart the data. Show students the chart.

Sample chart

|  |  |
| --- | --- |
| **Activity** | **Water Usage Prediction** |
| Brushing Teeth | 1 gallon each time |
| Washing Hands | 4 gallons each time |
| Flushing Toilet | 5 gallons each time |

**Try it out -** Students will then complete their charts by adding each activity in relation to how many times they actually did that activity in one day. After getting the estimated totals for each activity they will add up all activities to come up with a total amount of water usage in a single day. Each child will come up to fill in the chart next to their names and the amount of water usage they used in a single day.

**Differentiate**

Students who are not fluent in multiplication can use repeated addition to get their totals for the chart.

Ex. Ex. Flushing the toilet bowl = 5 gallons of water for each flush

So if I flush the toilet bowl 3 times. 5+5+5=15 gallons of water.

**Share**

Create a graph to represent the data collected for a single day water usage. After charting down each students daily water usage we compare data. Which student uses the most water? Which student uses the least amount of water?

**Homework**

Students write a paper explaining what they learned about water, and how they can reduce their water usage during everyday activities.